A petition for extension of time of three months is submitted simultaneously herewith thereby extending the time to respond to the Office action until February 8, 2003. Accordingly, this Amendment is timely filed.

Section 112 Rejection

Claims 1 through 3, 8, 9, 13, 14 and 19 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. With respect to claim 1, the Examiner pointed to the use of the term "preferentially" as being indefinite because it is not clear whether the claims require the molten component near the surface of the molten thermoplastic or, if not, what limitation is imposed by the term.

At page 9, lines 1 through 11 of the specification, the meaning of the term "preferentially" is apparent. There, it is stated, "[W]we believe, but are not bound, that the mechanism wherein the tendency for the low viscosity component to locate at the ultra high shear region adjacent to apparatus stationary surfaces is a primary driving force for it to preferentially locate at the article surface." Thus, the term "preferentially" describes a characteristic of the lower viscosity molten component of the invention to exhibit a tendency to locate near the surface of the molten thermoplastic polymer. Moreover, the term "preferentially locate" is used at page 3, lines 9 through 11 in reference to US Patent 5,069,970 to describe the tendency of low surface energy organic polymers to preferentially locate at the surface of PET fibers. At page 3, lines 32 through 34 of the specification, it is described how the solubility parameter of polymer blends signifies a lower surface energy and hence a greater propensity to preferentially locate at the article surface. Thus, term "preferentially" describes a characteristic of the lower

viscosity molten component of the invention to exhibit a tendency or propensity to locate near the surface of the molten thermoplastic polymer.

Rejection of the indefiniteness rejection of claim 1 and claims dependent therefrom respectfully is requested.

Section 102(b) and 103(a) Rejections Based Upon Wessling

Claims 1 and 2 stand rejected under 35 USC § 102(b) as being anticipated by, or in the alternative under 35 U.S.C. § 103(a) as obvious over, Wessling (U.S. Patent No. 4,929,388). Claims 3, 13, 14 and 18 stand rejected under 35 U.S.C. § 103(a) as obvious over Wessling. Applicants respectfully disagree.

A claim is anticipated only if each and every element as set forth in the claim is found, whether expressly or inherently described, in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the ... claim.

To establish *prima facie* obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. All the words in a claim must be considered in judging the patentability of that claim against the prior art.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

It is submitted that claim 1 as drafted is patentably distinguishable over Wessling. Wessling is directed to anti-static or electrically semi-conducting thermoplastic polymer blends containing two partially compatible polymers, A and B. The polymers form two continuous phases which reciprocally penetrate one another, thus forming an interpenetrating network. The viscosity of polymer B is lower than the viscosity of polymer A such that polymer A forms a continuous phase into which polymer B will enter.

Claim 1 of the subject invention recites that the melt viscosity of the molten component is substantially less than the melt viscosity of the molten thermoplastic polymer. As defined in the specification at page 9, lines 6 through 9, "substantially lower" means the ratio of the base molten polymer to the molten additive at the melt processing temperature is at least about 1.5/1, preferably at least about 3/1, and most preferably at least about 10/1. The substantially lower viscosity of the molten component permits it to preferentially locate near the surface of the higher viscosity molten thermoplastic component.

In contrast, Wessling does not disclose information about the viscosities of the two polymers. However, it is presumed that the difference between the viscosities of the two components A and B will be smaller to permit polymer B to disperse throughout polymer A and form an interpenetrating network of polymers which reciprocally penetrate one another. This is supported by the minimal difference in the solubility parameters defined by the Wessling patent. The solubility parameters of the two Wessling polymers A and B must differ by at least 0.3 (cal/cm^3) but no more than about 1.5 (cal/cm^3). In other words, the solubility parameters should be sufficiently different so

that the blend has distinct phases but not so different that there is poor adhesion at the interface between phases.

By contrast, in the subject invention, the solubility parameter may exceed this limit. See example F40-42, which combines polyethylene (CSP of 8.1) with a PET (CSP of 11.5) for a solubility parameter difference of 3.4 (cal/cm^3). Moreover, the subject invention permits a viscosity differential sufficient to allow the lower viscosity polymer to preferentially locate near the surface of the higher viscosity component. The lower viscosity component in Wessling forms an interpenetrating network with the marginally higher viscosity component.

Wessling does not teach that the ratio of the melt viscosities of the base molten polymer to the molten additive at the melt processing temperature is at least about 1.5/1, preferably at least about 3/1, and most preferably at least about 10/1. The Examiner points to no text in Wessling which discusses varying the ratio of the molten additive and the molten polymer, but apparently relies on the position that such ratios would have been obvious to try. Some reason or suggestion must be found in the art or other evidence of record that would have led on of ordinary skill in the art to produce the claimed invention. There is no suggestion or expressed expectation of success in Wessling that would have led one to experiment with the claimed ratios. Accordingly, a *prima facie* case of obviousness has not been made.

Therefore, after a fair reading of Wessling, one with ordinary skill in the art would not be able to comprehend a process comprising the steps of (a) adding a substantially molten thermoplastic polymer with a CSP value of 8 to a molten thermoplastic polymer and mixing to substantially uniformly disperse said molten

component in said molten thermoplastic polymer and form a heterogeneous blend wherein (i) the **melt viscosity of said molten component is substantially less than the melt viscosity of said molten thermoplastic polymer;** and (ii) the amount of said molten component in said molten thermoplastic polymer is up to about ten percent by weight based on the heterogeneous blend; and (b) melt processing the heterogeneous blend wherein **the molten component preferentially locates near the surface of the molten thermoplastic polymer** and substantially no chemical reaction occurs between the molten component and the molten thermoplastic polymer. Nor does Wessling teach, disclose, suggest or motivate one with ordinary skill in the art to make and/or use the process of the current application. The Examiner has failed to state a case of *prima facie* obviousness.

Based upon this argument, among others, Wessling does not anticipate claim 1 of the present application because Wessling is lacking at least one specific feature or structural recitation found in the present application and in claim 1. Claim 1 is therefore allowable as not being anticipated or obviated by Wessling. Further, Wessling neither anticipates nor obviates claims 2, 3, 13, 14 and 18 of the present application by virtue of their dependency on claim 1 or an intervening claim dependent from claim 1.

Accordingly, reconsideration of the foregoing rejection respectfully is requested.

Section 102(b) and 103(a) Rejections Based Upon Scharf

Claims 1 and 2 stand rejected under 35 USC § 102(b) as being anticipated by, or in the alternative under 35 U.S.C. § 103(a) as obvious over, Scharf (U.S. Patent No. 4,447,572). Claims 3 and 18 stand rejected under 35 U.S.C. § 103(a) as obvious over Scharf. Applicants respectfully disagree.

Scharf is directed to non-homogeneous compositions having properties of flame retardancy given by blending polyamides with a halogenated derivative and a polymer blend resin. The polymer blends useful in the Scharf invention include those which are partially incompatible in the substrate polyamide and have a melt viscosity lower than the substrate polyamide.

Claim 1 of the subject invention recites that the melt viscosity of the molten component is substantially less than the melt viscosity of the molten thermoplastic polymer. As defined in the specification at page 9, lines 6 through 9, "substantially lower" means the ratio of the base molten polymer to the molten additive at the melt processing temperature is at least about 1.5/1, preferably at least about 3/1, and most preferably at least about 10/1.

Scharf does not teach that the ratio of the melt viscosities of the base molten polymer to the molten additive at the melt processing temperature is at least about 1.5/1, preferably at least about 3/1, and most preferably at least about 10/1. The Examiner points to no text in Scharf which discusses varying the ratio of the molten additive and the molten polymer, but apparently relies on the position that such ratios would have been obvious to try. Some reason or suggestion must be found in the art or other evidence of record that would have led on of ordinary skill in the art to produce the claimed invention. There is no suggestion or expressed expectation of success in Scharf that would have led one to experiment with the claimed ratios. Accordingly, a *prima facie* case of obviousness has not been made.

Moreover, Scharf does not teach or suggest that substantially no chemical reaction occurs between said molten component and said molten thermoplastic polymer. The

Examiner points to no text in Scharf which teaches that substantially no chemical reaction occurs between the molten component and the molten thermoplastic polymer.

Therefore, after a fair reading of Scharf, one with ordinary skill in the art would not be able to comprehend a process comprising the steps of (a) adding a substantially molten thermoplastic polymer with a CSP value of 8 to a molten thermoplastic polymer and mixing to substantially uniformly disperse said molten component in said molten thermoplastic polymer and form a heterogeneous blend wherein (i) the **melt viscosity of said molten component is substantially less than the melt viscosity of said molten thermoplastic polymer;** and (ii) the amount of said molten component in said molten thermoplastic polymer is up to about ten percent by weight based on the heterogeneous blend; and (b) melt processing the heterogeneous blend wherein the molten component preferentially locates near the surface of the molten thermoplastic polymer and **substantially no chemical reaction occurs between the molten component and the molten thermoplastic polymer**. Nor does Scharf teach, disclose, suggest or motivate one with ordinary skill in the art to make and/or use the process of the current application. The Examiner has failed to state a case of *prima facie* obviousness.

Based upon this argument, among others, Scharf does not anticipate claim 1 of the present application because Scharf is lacking at least one specific feature or structural recitation found in the present application and in claim 1. Claim 1 is therefore allowable as not being anticipated or obviated by Scharf. Further, Scharf neither anticipates nor obviates claims 3 and 18 of the present application by virtue of their dependency on claim 1 or an intervening claim dependent from claim 1.

Accordingly, reconsideration of the foregoing rejection respectfully is requested.

In view of the foregoing remarks, it is submitted that the claims now of record are allowable and should be passed to issue. An early and favorable action on the merits is solicited earnestly.

Should the Examiner have questions or comments regarding the application or this response, Applicants' attorney would welcome the opportunity to discuss the case with the Examiner.

This is intended to be a complete response to the Office action mailed August 8, 2002.

Respectfully submitted,

By _____
Margaret S. Millikin
Applicants' Attorney
Reg. No. 38,969

Honeywell International Inc.
15801 Woods Edge Road
Colonial Heights, VA 23834
804-520-3651

I hereby certify that this correspondence is being deposited with the United States Patent & Trademark Office via facsimile to Patricia A. Short, Group Art Unit 1712, at RightFax No. 703-872-9310 on February 7, 2003.

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Margaret S. Millikin

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